



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,629	08/18/2003	Wei Li	50277-2248	4456
42425	7590	07/12/2007	EXAMINER	
HICKMAN PALERMO TRUONG & BECKER/ORACLE 2055 GATEWAY PLACE SUITE 550 SAN JOSE, CA 95110-1089			ALAM, SHAHID AL	
ART UNIT		PAPER NUMBER		
2162				
MAIL DATE		DELIVERY MODE		
07/12/2007		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/643,629	LI ET AL.
	Examiner Shahid Al Alam	Art Unit 2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 12 April 2007.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 21-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 21-28 is/are rejected.
- 7) Claim(s) 29-34 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 18 August 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 05102007.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Response to Arguments***

1. Applicant's arguments filed April 12, 2007 with respect to claims 21 – 34 have been fully considered but they are not persuasive for the claims 21 – 28.

Applicant's arguments with respect to claims 29 – 34 have been fully considered and are persuasive.

Applicant argues that Agrawal lacks any teaching or suggestion of grouping the candidate combination into clusters during a phase of a frequent item-set operation.

Examiner respectfully disagrees as argued. Examiner, in his previous office action, gave detail explanation of claimed limitation and pointed out exact locations in the cited prior art.

Examiner is entitled to give claim limitations their broadest reasonable interpretation in light of the specification. See MPEP 2111 [R-1]

#### **Interpretation of Claims-Broadest Reasonable Interpretation**

During patent examination, the pending claims must be 'given the broadest reasonable interpretation consistent with the specification.' Applicant always has the opportunity to amend the claims during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 162 USPQ 541,550-51 (CCPA 1969).

Agrawal teaches a method and apparatus for mining data relationships from an integrated database and data-mining system are disclosed. A set of frequent 1-itemsets is generated using a group-by query on data transactions. From these frequent

1-itemsets and the transactions, frequent 2-itemsets are determined. A candidate set of (n+2)-itemsets are generated from the frequent 2-itemsets, where n=1. Frequent (n+2)-itemsets are determined from candidate set and the transaction table using a query operation. The candidate set and frequent (n+2)-itemset are generated for (n+1) until the candidate set is empty. Rules are then extracted from the union of the determined frequent itemsets.

Agrawal's teachings of different approach of joining and generation of frequency itemsets clearly teaches Applicant's claimed argument.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21 – 28 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,324,533 (henceforth referred to as Agrawal et al.).

Claim 21 is anticipated by the well-known apriori method as disclosed by Agrawal et al. as follows: A method for performing a frequent itemset operation, the method comprising the steps of: performing the frequent itemset operation in a plurality of phases, wherein each phase is associated with combinations that have a particular number of items (C5:L32-34); during at least one phase of the plurality of phases, performing the steps of determining candidate combinations that are to be evaluated

during the phase (C5:L37-41); grouping the candidate combinations into clusters based on which items are included in said candidate combinations (C5:L41-47); processing said candidate combinations, based on said clusters, to determine whether the candidate combinations satisfy a frequency criteria associated with said frequent itemset operation (C5:L47-50); and storing, in a computer-readable medium, data that indicates which candidate combinations satisfy the frequency criteria associated with said frequent itemset operation (The frequent 1-itemsets and 2-itemsets are generated by referring a transaction table to obtain candidate set of (n+2)-itemsets and frequent (n+2)-itemsets using a query operation. The generation of frequency itemsets is repeated until the candidate set is empty. The mining rules are generated from the union of determined frequency itemsets. See abstract and C4: L57-67).

Claim 23 is anticipated by Agrawal et al. as in claim 21, **wherein the step of grouping the candidate combinations into clusters includes the step of establishing an ordering for said candidate combinations by sorting the candidate combinations relative to each other based on the items within each of the candidate combinations** (figure 7 step 71; C6:L67-C7:L1, a lexicographical ordering will ensure that the subsets are ordered by the item names included in the subset).

Claim 25 is anticipated by Agrawal et al. as in claim 23, **wherein the step of processing the candidate combinations based on the clusters includes processing the candidate combinations in a sequence based on said ordering (C7:L4-14).**

Claim 27 is anticipated by Agrawal et al. as in claim 21, **wherein the step of grouping the candidate combinations into clusters includes hashing the candidate combinations into buckets based on the items that the candidate combination contain** (C12:L48-55; C13:L13-22).

Claims 22, 24, 26, and 28 are essentially the same as claims 21, 23, 25 and 27 except it recites a computer-readable storage medium and therefore, the subject matter of these claims are rejected for the same reasons as applied hereinabove.

***Allowable Subject Matter***

3. Claims 29 – 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shahid Al Alam whose telephone number is (571) 272-4030. The examiner can normally be reached on Monday-Thursday 8:00 A.M.- 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Shahid Al Alam  
Primary Examiner  
Art Unit 2162

July 6, 2007